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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARRINGTON, ALICIA M

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/978,596

Applicant(s)

MORI ET AL.

Examiner

Alicia M Harrington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2003 and 17 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,11 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 2,4-6,8-10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 4/17/03. These drawings are approved by the Examiner.

Information Disclosure Statement

2. The Examiner has considered the information disclosure statement filed on 3/21/03.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideaki (JP 10253506- consulted Japanese translator).

Regarding claims 1 and 13, Hideaki discloses an optical device (see figure 1) for recording or reproducing information on or from an optical disc (6), comprising:

A light source (1 or 2) radiating a laser beam (650 nm or 780 nm); an optical detector (see figure 5; #11); a collimator (4) converting radiated light of light source into fine divergent pencil rays; and objective lens (5) that focuses the rays on the optical disc; wherein the collimator lens surface is curved to form a wave-front shape that corrects for coma aberration of the radiated light at a position at which radiated light intersects the collimator lens (page 6,

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corrects in correspondence to radial distance from the center of the collimator lens. Although, coma aberration is produce in recording systems due to axial tilt of the beams or disk. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify, Hideaki to increasing correct along the radial distance from the center of the collimator lens, since the center of the collimator lens is aligned with the optical axis and the coma would increase as the radial distance increased from the optical axis.

5. Claims 3, 7, 11, 14, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideaki (JP 10253506- consulted Japanese translator) in view of Kim et al (US 6,337,841)

Regarding claims 3 and 14, Hideaki discloses an optical device (see figure 1) for recording or reproducing information on or from an optical disc (6), comprising:

A first light source (1) radiating a laser beam (650 nm); a first detector (see the laser/detector module displayed in figure 5); a second light source (2); a second detector (see the laser/detector module of figure 5); a collimator (4) converting radiated light of light source into fine divergent pencil rays; and objective lens (5) that focuses the rays different wavelengths on the optical disc; wherein the collimator lens surface is curved to form a wave front shape that corrects for coma aberration of the radiated light at a position at which radiated light intersects the collimator lens (page 6, second column until section 56). However, Hideaki fails to specifically disclose the collimator corrects in correspondence to radial distance from a center of the collimator lens. Although, coma aberration is produced in recording and reproduction systems due to axial tilt of the beams or disk. Thus, it would have been obvious to one of

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collimator lens is aligned with the optical axis and the coma would increase as the radial distance increased from the optical axis. In addition, Hideaki fails to specifically disclose a two collimator lens embodiment where the first collimator lens converts radiated light from the first light source into substantially parallel beams as claimed.

In the same field of endeavor, Kim et al discloses a dual (CD and DVD) optical recording system (see figure 11) where the first light source (650 nm) unit includes a collimator lens (214) for converting the radiated light of the first light source into substantially parallel beams. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hideaki, to provide an optical recording or reproducing device for a CD and DVD system where a collimator lens is placed to shape the light for the first wavelength of light, since such a system is known in the art.

Regarding claims 7 and 15, Hideaki discloses an optical device (see figure 1) for recording or reproducing information on or from an optical disc (6), comprising:

A first light source (1) radiating a laser beam (650 nm); a first detector (see the laser/detector module displayed in figure 5); a second light source (2); a second detector (see the laser/detector module of figure 5); a light separator (3); a collimator (4) converting radiated light of light source into fine divergent pencil rays; and objective lens (5) that focuses the rays different wavelengths on the optical disc; wherein the collimator lens surface is curved to form a wave front shape that corrects for coma aberration of the radiated light at a position at which radiated light intersects the collimator lens (page 6, second column until section 56). However, Hideaki fails to specifically disclose the collimator corrects in correspondence to radial distance from a center of the collimator lens. Although, coma aberration is produced in recording and

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reproduction systems due to axial tilt of the beams or disk. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify, Hideaki to increasing correct along the radial distance from the center of the collimator lens, since the center of the collimator lens is aligned with the optical axis and the coma would increase as the radial distance increased from the optical axis. In addition, Hideaki fails to specifically disclose a two collimator lens embodiment where the first collimator lens converts radiated light from the first light source into substantially parallel beams as claimed.

In the same field of endeavor, Kim et al discloses a dual (CD and DVD) optical recording system (see figure 11) where the first light source (650 nm) unit includes a collimator lens (214) for converting the radiated light of the first light source into substantially parallel beams. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hideaki, to provide an optical recording or reproducing device for a CD and DVD system where a collimator lens is placed to shape the light for the first wavelength of light, since such a system is known in the art.

Regarding claim 11 and 16, Hideaki discloses an optical device (see figure 1) for recording or reproducing information on or from an optical disc (6), comprising:

A first light source (1) radiating a laser beam (650 nm); a first detector (see the laser/detector module displayed in figure 5); a second light source (2); a second detector (see the laser/detector module of figure 5); a light separator (3); a collimator (4) converting radiated light of light source into fine divergent pencil rays; and objective lens (5) that focuses the rays of different wavelengths on the optical disc; wherein the collimator lens surface is curved to form a wave front shape that corrects for coma aberration of the radiated light at a position at which

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radiated light intersects the collimator lens (page 6, second column until section 56). However, Hideaki fails to specifically disclose the collimator corrects in correspondence to radial distance from a center of the collimator lens. Although, coma aberration is produced in recording and reproduction systems due to axial tilt of the beams or disk. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify, Hideaki to increasing correct along the radial distance from the center of the collimator lens, since the center of the collimator lens is aligned with the optical axis and the coma would increase as the radial distance increased from the optical axis. In addition, Hideaki fails to specifically disclose a two collimator lens embodiment where the first collimator lens converts radiated light from the first light source into substantially parallel beams as claimed.

In the same field of endeavor, Kim et al discloses a dual (CD and DVD) optical recording system (see figure 11) where the first light source (650 nm) unit includes a collimator lens (214) for converting the radiated light of the first light source into substantially parallel beams. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hideaki, to provide an optical recording or reproducing device for a CD and DVD system where a collimator lens is placed to shape the light for the first wavelength of light, since such a system is known in the art.

However, Hideaki and Kim fail to specifically disclose the radiated light from the second light source reaches the objective via the first and second collimators. They disclose the claimed invention with the exception of the claimed optical path, and since applicant has not disclosed this solves any stated problem, it appears the invention would work equally as well with the optical path structure of Hideaki and Kim, and thus lacks criticality.

Allowable Subject Matter

6. Claims 2,4-6,8-10,12 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2, 4,8, 12, prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the dependent claims, in such manner that a rejection under 35 U.S.C 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims, which includes where a ratio of the sine amount increases substantially in proportion to the a square of the radius of a collimator lens as claimed.

Regarding claim 5-6,9-10, prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the dependent claims, in such manner that a rejection under 35 U.S.C 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims, which include the ratio of the radius of curvature of the incident and radiating surface fall within the claimed ranged.

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Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M Harrington whose telephone number is 703 308 9295. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703 308 4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703 308 0956

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Alicia M Harrington

Examiner

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